

# DESCRIPTIVE STATISTICS

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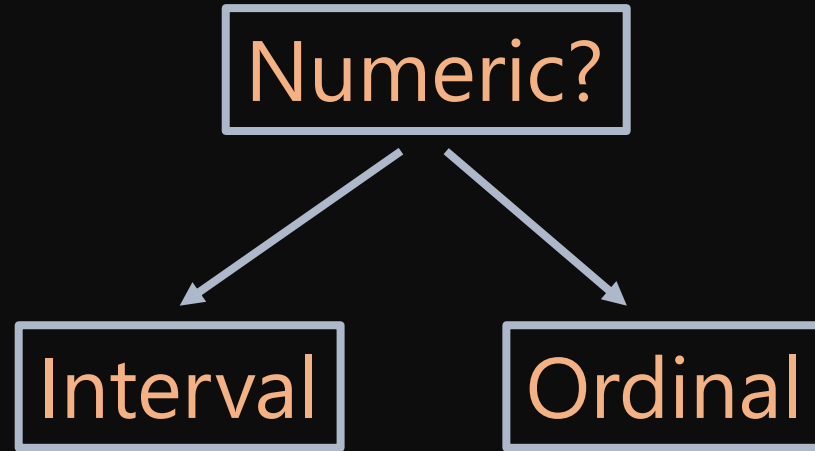
Statistics for Management  
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# Plan for today

1. Plotting numeric variables (cont.)
2. Bivariate descriptives

# **PLOTTING NUMERIC VARIABLES**

# Numeric variable



Stats: mean | median | mode | range | min | max | quantile...()

Vis: stemleaf | dotchart | stripchart  
hist | boxplot | rug | density | qqnorm()

- ✓ Which of the numeric variables in **realestate (lotsize, price, bedrooms)** follows a normal distribution? In your answer, use histogram, rug, and overlaid density plot for each variable.

# **DESCRIPTIVES WITH TWO VARIABLES**

# What tools exist to describe two variables?



**It depends on the variable types!**

**Let's start with two categorical variables.**



**Stats:** `table|prop.table()`

**Vis:** `mosaicplot|barplot()`



- ✓ Examine the proportional relationship between recrooms and the house being in a preferred area. Use both a table and a barplot.
- ✓ In constructing the plot use the following arguments:
  - Title: Recrooms by Location
  - X-axis title: Preferred area (yes/no)
  - Legend: bottom right corner (indicating recroom)
  - Colors: "darkgrey" (without a recroom), "darkgoldenrod1" (with a recroom)

## And now with two numerical variables



**Stats:** `cor` | `lm()`  
We will review these later on

**Vis:** `plot()`  
Essentially this is a scatterplot  
Various enhancements

- ✓ What is the relationship between lot size and price?
- ✓ Identify at least three “outliers” (by row number). If they are priced higher than the rest, how many of them are in a preferred area?

## Finally, a categorical and numerical variable



**Stats:** `table | xtabs | ftable | aggregate | CrosTable()`  
We will review these later on

**Vis:** `boxplot()`  
We will explore additional options later on

- ✓ What is the relationship between having a finished basement and price?
- ✓ Identify at least three “outliers” (by row number), from those that have and those that do not have a finished basement—so, a total of six. What observations can you make about these outliers?